

BURN CASUALTIES

FMST0402



3D Marines

TERMINAL LEARNING OBJECTIVES

- GIVEN A BURN CASUALTY IN A COMBAT ENVIRONMENT (DAY AND NIGHT), AND STANDARD FIELD MEDICAL SERVICE TECHNICIAN SUPPLIES AND EQUIPMENT, MANAGE BURN CASUALTIES PER THE REFERENCES. (FMST.04.02)



ENABLING LEARNING OBJECTIVES

- 1. WITHOUT THE AID OF REFERENCE MATERIALS AND GIVEN A LIST OF BURN CLASSIFICATIONS AND TREATMENTS, SELECT THE PROPER TREATMENT FOR THE TYPE OF BURN, PER THE STUDENT HANDBOOK. (FMST.04.02A)



ENABLING LEARNING OBJECTIVES CONT.

- 2. WITHOUT THE AID OF REFERENCE MATERIALS, USING THE RULE OF NINES, ESTIMATE THE PERCENT OF BODY SURFACE AREA BURNED, PERSTUDENT HANDBOOK. (FMST.04.02B)



ENABLING LEARNING OBJECTIVES CONT.

- 3. WITHOUT THE AID OF REFERENCE MATERIALS, USING THE RULE OF PALMS, ESTIMATE THE PERCENT OF BODY SURFACE AREA BURNED



ENABLING LEARNING OBJECTIVES CONT.

- 4. WITHOUT THE AID OF REFERENCE AND GIVEN FMST MOLLE MEDIC BAG AND SIMULATED BURN CASUALTY, IDENTIFY, TREAT, AND MONITOR THE CAUSALITY, PER THE STUDENT HANDBOOK. (FMST.04.02d)



HISTORY/PREVALENCE

- Thermal burns are not uncommon injuries on modern battlefields. Burns from flame weapons and devices such as napalm and white phosphorous or explosions from fuel sources such as gasoline, diesel and jet fuel.



HISTORY/PREVALENCE CONT.

- The severity of the burns experienced by the patient will vary greatly, depending on the source of the burn, the amount of time the patient was exposed to the agent, and the location of the burn.



ANATOMY AND PHYSIOLOGY OF THE SKIN



3D Marines

FUNCTION

- THERMOREGULATION
- PROTECTION
- SECRETION
- SENSORY RECEPTION



COMPOSITION

3 LAYERS

- EPIDERMIS
- DERMIS
- HYPODERMIS



CLASSIFICATIONS OF BURNS



BURNS ARE CATEGORIZED BY TWO METHODS

- DEPTH OF THE BURN
- TOTAL BODY SURFACE AREA BURNED



DEPTH OF THE BURN

- FIRST DEGREE/SUPERFICIAL BURN
 - A BURN THE INVOLVES ONLY THE EPIDERMIS.
 - SIGN/SYMPTOMS
 - 1. SKIN IS DRY AND ERYTHEMATOUS
 - 2. PAIN TO SITE
 - 3. BURNED AREA BLANCHES WITH PRESSURE
 - 4. EDEMA WILL BE MINIMAL(IF ANY)



DEPTH OF BURN CONT.

- SECOND DEGREE/PARTIAL THICKNESS BURNS
 - A BURN IN WHICH THE EPIDERMIS IS BURNED THROUGH AND THE DERMNISIS DAMAGED
 - SIGNS/SYMPTOMS
 - 1.DEEP, INTENSE PAIN
 - 2. SKIN IS MOIST



DEPTH OF BURN CONT.

- SECOND DEGREE/PARTIAL THICKNESS BURNS CONT.
 - SIGNS/SYPTOMS CONT.
 - 3. SKIN WILL BE HYPEREMIC IN COLOR
 - 4. BLISTER FORMATION
 - 5. EDEMA WILL BE MODERATE



DEPTH OF BURN CONT.

- THIRD DEGREE/FULL THICKNESS BURN
 - A BURN IN WHICH ALL THE LAYERS OF THE SKIN ARE DAMAGED.
 - SIGNS/SYMPTOMS
 - 1. SKIN HAS A DRY, LEATHY APPEARANCE
 - 2. SKIN CAN RANGE IN COLOR FROM PALE YELLOW TO CHERRY RED, BROWN, OR CARBON BLACK.



DEPTH OF BURN CONT.

- THIRD DEGREE/FULL THICKNESS BURN
 - SIGNS/SYMPTOMS
 - 3. SEVERE PAIN AROUND THE PERIPHERY OF BURN, BUT LITTLE TO NO PAIN NEAR THE CENTER OF BURN.
 - 4. FIRST AND SECOND DEGREE BURNS WILL SURROUND THE THIRD DEGREE



DEPTH OF BURN CONT.

- TOTAL BODY SURFACE AREA BURNED
 - THERE ARE TWO METHODS FOR ESTIMATING TBSA
 - RULE OF NINES(ROD)
 - RULE OF PALM'S(ROP)



DEPTH OF BURN CONT.

- RULE ON NINES (RON)
- IT IS THE ESTIMATE OF TBSA INTO AREAS COMPROMISING 9% OR MULTIPLES OF 9%



DEPTH OF BURN CONT.

- RON SAMPLE PROBLEM CONT.
 - BURNS TO THE ANTERIOR HEAD, ANTERIOR RIGHT ARM, POSTERIOR LEFT ARM, POSTERIOR LEFT LEG, AND TO THE UPPER CHEST.



DEPTH OF BURN CONT.

- RON SAMPLE PROBLEM CONT.
 - ANTERIOR HEAD-4.5%
 - ANTERIOR RIGHT ARM-4.5%
 - POSTERIOR LEFT ARM-4.5%
 - POSTERIOR LEFT LEG-9%
 - UPPER CHEST-9%
 - EQUALS-31.5%



DEPTH OF BURN CONT.

- RULE OF PALM'S
 - THE RULE ASSUMES THAT THE PALM SIZE OF THE PATIENT REPRESENTS APPROXIMATELY 1% OF THE TBSA. THEN THE TBSA IS ESTIMATED BY APPROXIMATING THE NUMBER OF “PALMS” IT WOULD TAKE TO COMPLETELY COVER THE BURN.



DEPTH OF BURN CONT.

- RULE OF PALM'S CONT.
 - THE RULE OF PALM'S IS HELPFUL FOR ESTIMATING TH TBSA OF SMALL OR IRREGULARLY FORMED BURNS.



TYPES OF BURNS



INHALATION BURNS

- BURNS IN THE UPPER AND LOWER AIRWAYS, CAUSED BY THE INSPIRATION OF HEAT, TOXIC CHEMICALS, SMOKE, OR OTHER GASES.



INHALATION BURNS CONT.

- CAUSES
 - HEAT INHALATION
 - INHALATION OF TOXIC CHEMICALS OR SMOKE
 - INHALATION OF CARBON MONOXIDE GAS



INHALATION BURNS CONT.

- SIGNS/ SYMPTOMS
 - DYSPNEA
 - TACHYPNEA
 - COUGHING
 - STRIDOR
 - HOARSENESS
 - SOOTY SPUTUM
 - ABNORMAL LUNG SOUNDS



INHALATION BURNS CONT.

- SIGNS/ SYMPTOMS CONT.
 - BURNS TO THE ORAL AND /OR PHARYNGEAL MUCOUS MEMBRANES
 - SINGED NASAL HAIRS
 - FACIAL BURNS
 - TACHYCARDIA



INHALATION BURNS CONT.

- TREATMENT
 - MAINTAIN THE PATIENT'S ABC'S
 - GIVEN HUMIDIFIED OXYGEN
 - PLACE PATIENT IN HIGH FOWLERS
 - EVACUATE



THERMAL BURNS

- TISSUE INJURY CAUSED BY EXPOSURE TO EXTREME RADIANT HEAT.
- CAUSES
 - SCALDING LIQUIDS
 - STEAM OR OTHER HOT GASES
 - CONTACT WITH HOT OBJECTS
 - FIRE



THERMAL BURNS CONT.

- SIGN/SYMPTOM
 - THEY ARE THE SAME AS FIRST,SECOND AND THIRD DEGREE BURNS.
- TREATMENT
 - REMOVE PATIENT FROM THE SOURCE OF INJURY
 - MAINTAIN THE PATIENT'S ABC'S



THERMAL BURNS CONT.

- TREATMENT CONT.
 - REMOVE ANY MATERIAL THAT COULD CONTINUE THE BURNING PROCESS
 - FIRST DEGREE BURNS
 - IMMERSION IN COOL WATER OR APPLY A COOL COMPRESS.
 - SECOND DEGREE BURN
 - PLACE IN COOL WATER OR APPLY COOL COMPRESS



THERMAL BURNS CONT.

- TREATMENT CONT.
 - SECOND DEGREE BURN CONT.
 - DRY, BULKY DRESSING CAN BE APPLIED LATER.
 - GIVEN OXYGEN
 - PROTECT THE PATIENT FROM HEAT LOSS AND POSSIBLE HYPOTHERMIA
 - TREAT FOR SHOCK



INDUSTRIAL OR CHEMICAL BURNS

- OCCURS WHEN THE PATIENT COMES IN DIRECT CONTACT WITH CAUSTIC CHEMICAL AGENTS.
- CAUSES
 - ACID
 - ALKALIIES



INDUSTRIAL OR CHEMICAL BURNS CONT.

- CAUSES CONT.
 - PETROLEUM BASED PRODUCES
 - MILITARY CAUSES
 - NAPALM
 - WHITE PHOSPHOROUS



INDUSTRIAL OR CHEMICAL BURNS CONT.

- SIGNS/SYMPTOMS- INFLUENCED BY THE LENGTH OF CONTACT, CON- CENTRATION OF THE CHEMICAL, AND THE AMOUNT OF CHEMICAL.
 - ERYTHEMA
 - EDEMA
 - BLISTERS
 - TISSUE NECROSIS
 - PAIN AT THE EXPOSURE SITE



INDUSTRIAL OR CHEMICAL BURNS CONT.

- TREATMENTS
 - IRRIGATE AREA WITH COPIOUS AMOUNTS OF WATER
 - LIME OR CONCRETE SHOULD NOT BE IRRIGATED. THEY SHOULD BRUSHED OFF THE PATIENT.
 - WATER SHOULD NOT BE USED ON PHENOL(CARBOLIC ACID) BURNS; USE LIPID-SOLUBLE SOLVENT



INDUSTRIAL OR CHEMICAL BURNS CONT.

- TREAMENTS CONT.
 - HYDROFLOURIC ACID BURNS ARE LIFE THREATENING AND SHOULD BE EVACUTED.
 - WHITE PHOSPHORUS
 - COVER BURN WITH WET DRESSINGS
 - SODIUM BICARBONATE SOLUTION MAY USED TO RINSE AND HELP NEUTRALIZE THE RESULTING PHOSPHORIC ACID.



ELECTRICAL BURNS

- ELECTRICAL CURRENT, INCLUDING LIGHTING, CAN CAUSE SEVERE DAMAGE TO THE BODY. THE SKIN IS BURNED WHERE THE ENERGY ENTERS THE BODY AND WHERE IT FLOWS INTO A GROUND. ALONG THE PATH OF THIS FLOW, TISSUES ARE DAMAGED DUE TO HEAT.



ELECTRICAL BURNS CONT.

- CAUSES
 - EXPOSURE TO ELECTRICAL CURRENT (AC OR DC)
 - LIGHTNING STRIKE



ELECTRICAL BURNS CONT.

- SIGNS/SYMPTOMS
 - BURNS WHERE THE ENERGY ENTERS AND EXITS THE BODY.
 - DIFFICULTY BREATHING OR RESPIRATORY ARREST
 - IRREGULAR HEARTBEAT OR CARDIAC ARREST
 - MUSCLE TENDERNESS



ELECTRICAL BURNS CONT.

- SIGNS/SYMPTOMS CONT.
 - FASICULATIONS
 - CONVULSIONS
 - FRACTURED BONE
 - VISUAL DIFFICULTIES

Symptoms of an electrical burn may not occur until hours after the injury!



ELECTRICAL BURNS CONT.

- TREATMENT
 - MAINTAIN ABC'S
 - TREAT FOR SHOCK
 - GIVE OXYGEN
 - APPLY COOL COMPRESS TO BURN AREA
 - DRY, STERILE DRESSINGS TO BURNS
 - EVACUTE (ALL ELECTRICAL CASUALTIES!)



TREATMENT OF BURNS

GENERAL PRINCIPLES

- MAINTAIN PATIENTS ABC'S
- REMOVE THE PATIENT FOR THE BURN ENVIROMENT
- REMOVE ANY SUBSTANCE WHICH WILL CONTINUE THE BURN PROCESS



QUESTIONS



3D Marines

REVIEW



3D Marines